CLAIMS

1. An image reader comprising light source means for irradiating an original surface with light and light receiving means for receiving reflected light on the original, in which the light receiving means comprises:

a fiber lens which is provided with a light-absorbing layer around at least one of individual optical fibers of a specific length disposed in a specific shape and a fiber bundle bundling a plurality of the optical fibers.

2. A fiber lens comprising a light-absorbing layer around at least one of individual optical fibers of a specific length disposed in a specific shape and a fiber-bundle bundling a plurality of the optical fibers.

3. A fiber lens according to claim 2, wherein the individual optical fibers have a distribution of a refractive index that falls down gradually in a direction right-angled to the axis of the optical fiber.

4. A fiber lens according to claim 2, wherein the fiber-bundle has a side length of the fiber-bundle, a length of the optical fiber and an angular aperture that satisfy the relation that the side length of the fiber-bundle divided by the length of the optical fiber is larger than a tangential value of the angular aperture of the optical fiber.

5. A method of manufacturing a fiber lens comprising the steps of:

stuffing a specific shaped frame opening top and bottom ends with one of individual optical fibers of a specific length and a fiber bundle bundling a plurality of the optical fibers around which a light-absorbing layer is formed, with a longitudinal direction of the optical fiber in the

vertical direction and side by side in a diametrical direction of the optical fiber; and

solidifying an adhesive filling gaps of the optical fibers.

6. A method of manufacturing a fiber lens comprising the steps of:

disposing close one of individual optical fibers of a specific length and a fiber bundle bundling a plurality of the optical fibers around which a light-absorbing layer is formed, side by side in a diametrical direction of the optical fiber; and

solidifying an adhesive filling gaps of the optical fibers by thermo-compression bonding with disposed optical fibers put between two basal plates in a specific shape.

7. A method of manufacturing a fiber lens according to claim 5 or 6, wherein the adhesive is used as the light-absorbing layer.

8. A method of manufacturing a fiber lens according to claim 5 or 6, wherein the adhesive is either one of glass or resin that have a low softening degree, and the softening degree is lower than that of the materials composing the fiber lens.

9. An image processor comprising an image reader including light source means irradiating an original and light receiving means receiving reflected light on the original, wherein the image readers are provided on upper and lower sides of a transport path for the original.

10. An image processor according to claim 9, wherein the image readers

on the upper and lower sides are arranged so as to differ positions irradiated with light by the upper and lower light sources.

11. An image processor according to claim 9, comprising:

reading correction means for correcting a reading characteristics of the image readers on the upper and lower sides so as to be the same.

12. An image processor according to claim 9, wherein the image readers on the upper and lower sides are fixed at specific positions respectively.

13. An image processor according to claim 9, wherein the image reader on the upper side is fixed at a specific position, while the other on the lower side is movable.

14. An image processor according to claim 9, in which the light receiving means comprises:

a fiber lens which comprises an optical fiber having a distribution of a refractive index that falls down gradually in a direction right-angled to the axis; and

a light-absorbing layer formed around at least one of the individual optical fibers of a specific length disposed in a specific shape and a fiber-bundle bundling a plurality of the optical fibers.

15. An image reader comprising light source means irradiating an original surface and light receiving means receiving reflected light on the original, wherein the light source means uniforms the illuminance over a specific width of the main-scanning and the sub-scanning directions for

reading images on the original surface.

16. An image reader comprising light source means irradiating an original surface and light receiving means receiving reflected light on the original, in which the light source means comprises:

a belt-like light source; and

a condensing lens in a specific shape and with a specific refractive index attached to a irradiating surface of the light source.

17. An image reader according to claim 16, wherein the condensing lens is in a shape of a series of a convex, one of a concave and a plane, and a convex.

18. An image reader according to claim 17, wherein the condensing lens has a shape of a D-section cylinder of which one of a plane and a concave is placed on a position corresponding to a top of a curved surface.

19. An image reader according to claim 15, in which the light receiving means comprises a fiber lens which is provided with a light-absorbing layer around at least one of individual optical fibers of a specific length disposed in a specific shape and a fiber-bundle bundling a plurality of the optical fibers.

20. An image processor wherein an image reader is placed on the upper and lower sides of a transport path respectively, said image reader comprising light source means uniforms the illuminance over a specific width of the main-scanning and the sub-scanning directions for reading images on the original surface and light receiving means receiving reflected

light on the original.

21. An image processor wherein an image reader is placed on either one of the upper and lower sides of a transport path, said image reader comprising light source means uniforming the illuminance over a specific width of the main-scanning and the sub-scanning directions for reading images on the original surface and light receiving means receiving reflected light on the original.

22. An image processor according to claim 20 or claim 21, in which the light receiving means comprises a fiber lens which is provided with a light-absorbing layer around at least one of individual optical fibers of a specific length disposed in a specific shape and a fiber-bundle bundling a plurality of the optical fibers.